

REMARKS/ARGUMENTS

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/1/2009 has been entered.

1. Rejection of claims 1, 6 and 12 under 35 U.S.C 103 (a) :

10 **Claims 1, 6 and 12 are rejected under 35 U.S.C 103(a) as being unpatentable over Kim (US 5568292) in view of Sekiguchi (US 6771327).**

Response :

15 At the outset, applicants reverently appreciate the Examiner's consideration of allowability of the claims. Since a new reference is now recited, and is regarded as a relative prior art, applicants would like to present the differences between the claims of this application and the recited references, and a Notice of Allowance is respectfully requested in consideration of the patentably distinct differences.

20 Claim 1 has been amended to specifically describe the input-sensor-integrated liquid crystal display panel of the present application. The limitation of "the first substrate dis-coinciding with the second substrate" added to claim 1 can be supported by paragraph [0017] of the specification and the drawings FIG. 4-FIG. 5. Paragraph [0017] of the specification indicates "*To achieve the demand, the top substrate 204 is not designed to coincide with the bottom substrate 202 completely for setting signal connecting contacts. For instance, the top substrate 204 has at least one protrusion 206 jutting out the bottom substrate 202 and the bottom substrate has at least one protrusion jutting out the top substrate 204*" No new material has been introduced. Acceptance of the amended claim 1 is respectfully requested.

30 In addition, firstly, applicants politely remind the Examiner of the second

substrate 404 having a touch-detecting circuit 416 and a color filter 408 formed on the touch-detecting circuit, as described in claim 1 and paragraph [0015] of the present application. In other words, the present invention is to integrate the touch-detecting circuit 416 into a **CF substrate** 404. Also shown in claim 1 and paragraph [0017] of the present application, the protrusion of the CF substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals to controlling or detecting circuit outside.

10 As shown in claim 1, the signal connecting contacts of the present application are connected to the detecting circuit for transmitting pixel controlling signals and touch-detecting signals. As a result, the second substrate of the present application further has the integral protrusion jutting out the first substrate, and has the signal connecting contacts disposed on the protrusion of the second substrate.

15 On the contrary, Kim or Sekiguchi does not teach or suggest such an upper substrate and such signal connecting contacts. The differences are described as following:

20 The Examiner points that “*Sekiguchi teaches a liquid crystal display device with an input panel comprising a first (Sekiguchi: 6, Fig. 33) and second substrate (Sekiguchi: 21, Fig. 33), wherein a first substrate has a protrusion jutting out the first substrate and a touch panel flexible printed circuit is disposed on the protrusion (Sekiguchi: See Fig. 33).*” in page 4 of the above-indicated Office action. Please refer to col. 8 lines 50-51 and Fig. 33 of Sekiguchi’s disclosure. Because the red (R) color filters 9, green (G) color filters 10, and blue (B) color filters 11 are under the CF substrate, the second substrate is defined as a color filter substrate or an upper substrate. It should be noted that Sekiguchi teaches that the length of the thin film transistor substrate is longer than that of the color filter substrate. On the contrary, in the present invention, the length of the thin film transistor substrate is substantially

shorter than that of the color filter substrate. It is therefore that the inconsistent structural characteristics are provided for comparison. In view of this, the comparison of both the substrates in Sekiguchi's disclosure and the present invention are unreasonable. In addition, the first substrate 1 has an LCD FPC 61' and a mounting IC 62 disposed on the LCD FPC 61' surface. In other words, Sekiguchi does not teach a position-sensitive liquid crystal display, which integrates the touch-detecting circuit into a CF substrate.

10 Therefore, although Sekiguchi's mounting IC 62, LCD connection portion 42, and the first substrate 1 can protuberate from the second substrate 7, Sekiguchi does not teach an integral protrusion of the CF substrate.

15 Furthermore, applicants politely remind the Examiner that the second substrate and the protrusion are integral in claim 1. That means the second substrate and the protrusion are actually one piece without any fracture there between. However, LCD connection portion 42, LCD FPC 61' and mounting IC 62 are additionally attached structures in Fig. 33, not an integral part of the first substrate 1, and not even a part of the CF substrate.

20 Since the first substrate 1 of Sekiguchi's disclosure is obviously not the CF substrate having a touch-detecting circuit and a color filter taught in the present application, applicants believe that it is not obvious to a person having ordinary skill in the art to consider first substrate 1 of Sekiguchi's disclosure as the CF substrate of the present application, and politely apply a reconsideration of such an incorporation.

25 On the other hand, as shown in the drawings of Kim's disclosure, the color filter 7 taught by Kim does not have a protrusion jutting out the substrate 1 having the thin film transistors 3. Therefore, the signal connections are still problems for Kim, and there is obvious no protrusions of the glass substrate 1' to installation of signal

connecting contacts in Kim's disclosure.

Applicants appreciate the thorough examination made by the Examiner. However, applicants also politely submit that the claimed input-sensor-integrated liquid crystal display panel including the concrete structure and the signal connecting means is non-obvious in consideration of the recited references. The signal connecting contacts, which are disposed on the CF substrate and connected to the detecting circuit, are especially included for such an input-sensor-integrated liquid crystal display panel for transmitting pixel controlling signals and touch-detecting signals on the second substrate. Furthermore, the CF substrate including the touch-detecting circuit, the color filter, the signal connecting contacts and the protrusion are not taught by the recited references. Therefore, applicants politely apply a reconsideration of the claim rejections under 35 U.S.C. 103(a).

Neither Kim nor Sekiguchi teach such an input-sensor-integrated liquid crystal display panel, so claim 1 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of claim 1 is respectfully requested. Since claims 6, 12 are dependent upon claim 1, it should be allowable if claim 1 is allowable. Reconsideration of claims 6, 12 is respectfully requested.

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2. Rejection of claims 8, 9 under 35 U.S.C 103(a) :

Claims 8 and 9 are rejected under 35 U.S.C 103(a) as being unpatentable over Kim in view Sekiguchi, as applied to claims 1, 6 and 12 above, and further in view of Hinata(US 6369865 B2).

25 **Response :**

Claim 1 has the limitation of "the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of

touch-detecting signals”.

As mentioned above, Kim and Sekiguchi do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion.

5 Further referring to Hinata, Hinata does not teach that

(1) the top substrate 8a has at least one protrusion jutting out the bottom substrate 8b;

10 (2) the top substrate 24 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 24; and

(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

15 Although the bottom substrate 8b has at least one protrusion jutting out of the top substrate 8a in Hinata’s disclosure, there is no protrusion of the top substrate 8a jutting out of the bottom substrate 8b. The top substrate 8a and the bottom substrate 8b, which have different structures and different purposes, are completely different from 20 each other, and should not be considered as the same. The protrusion of the second substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

25 The structure of the second substrate, the position of the signal connecting contacts, and the functions of the signal connecting contacts are not merely a meaningless design, the claimed structure is especially designed for integrating a touch-controlling circuit into liquid crystal display panel. However, all the recited 30 references do not teach the claimed input-sensor-integrated liquid crystal display panel

having the protruded second substrate for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

5 The combination of Kim's disclosure, Sekiguchi's disclosure and Hinata's disclosure does not teach all the limitations disclosed in claim 1. Thus, claim 1 should be allowable in consideration of 35 U.S.C. 103(a). Since claims 8 and 9 are dependent upon claim 1, they should be allowable if claim 1 is allowable. Reconsideration of claims 8 and 9 is respectfully requested.

10 **3. Rejection of claims 13 and 17-19 under 35 U.S.C. 103 (a)**

Claims 13 and 17-19 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kim in view of Mai (US 20040141096) and further in view of Sekiguchi.

Response :

15 Claim 13 has been amended to specifically describe the input-sensor-integrated liquid crystal display panel of the present application. The limitation of "the first substrate dis-coinciding with the second substrate" added to claim 1 can be supported by paragraph [0017] of the specification and the drawings FIG. 4-FIG. 5. The paragraph [0017] of the specification indicates "*To achieve the demand, the top substrate 204 is not designed to coincide with the bottom substrate 202 completely for setting signal connecting contacts. For instance, the top substrate 204 has at least one protrusion 206 jutting out the bottom substrate 202 and the bottom substrate has at least one protrusion jutting out the top substrate 204*" No new material has been introduced. Acceptance of the amended claim 13 is respectfully requested.

25 Claim 13 has the limitation of "a second substrate having a touch-detecting circuit and a color filter...the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of touch-detecting

signals”. As shown in paragraph [0019] and Fig. 6 of the present application, the detecting layer 316 and the color filter 308 are fabricated on the two opposite sides of the top substrate 304 to make the top substrate 304 have functions of displaying images and detecting signals.

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On the other hand, as shown in the drawings of Kim’s disclosure, the color filter 7 taught by Kim does not have a protrusion jutting out the glass substrate 1. Therefore, the signal connections are still problems for Kim, and there is obvious no protrusions of the upper substrate 1’ to installation of signal connecting contacts in Kim’s disclosure.

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Further referring to Mai, Mai does not teach that

(1) the upper substrate 132 has at least one protrusion jutting out the lower substrate 118;

15 (2) the top substrate 132 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 132; and

(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

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In addition, Mai teaches that the flat display device combines a touch panel 102 and a transmissive-type LCD device 100 including a color filter substrate and a thin film transistor. On the contrary, the present invention directly integrates the claimed touch-detecting circuit into the LCD panel 400. It is therefore that the actual evidence 25 for the structural characteristics is substantially inconsistent. In view of this, the comparison of both Mai’s disclosure and the present invention are unreasonable.

The combination of Kim’s disclosure, Mai’s disclosure and Sekiguchi’s disclosure does not disclose all the limitations of the structure in claim 13. Therefore, 30 claim 13 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of

claim 13 is respectfully requested.

Since claims 17-19 are dependent upon claim 13, they should be allowable if claim 13 is allowable. Reconsideration of claims 17-19 is respectfully requested.

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4. Rejection of claims 15-16 under 35 U.S.C. 103(a)

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over modified teachings of Kim, as applied to claims 13 and 17-19, and further in view of Hinata.

10 Response :

Claim 13 has been amended to specifically describe the input-sensor-integrated liquid crystal display panel of the present application. The limitation of “the first substrate dis-coinciding with the second substrate” added to claim 13 can be supported by paragraph [0017] of the specification and the drawings FIG. 4-FIG. 5.

15 The paragraph [0017] of the specification indicates “*To achieve the demand, the top substrate 204 is not designed to coincide with the bottom substrate 202 completely for setting signal connecting contacts. For instance, the top substrate 204 has at least one protrusion 206 jutting out the bottom substrate 202 and the bottom substrate has at least one protrusion jutting out the top substrate 204*” No new material has been
20 introduced. Acceptance of the amended claim 1 is respectfully requested.

Claim 13 has the limitation of “a second substrate having a touch-detecting circuit and a color filter...the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of touch-detecting signals”. As shown in paragraph [0019] and Fig. 6 of the present application, the detecting layer 316 and the color filter 308 are fabricated on the two opposite sides of the top substrate 304 to make the top substrate 304 have functions of displaying

images and detecting signals.

On the other hand, as shown in the drawings of Kim's disclosure, the color filter 7 taught by Kim does not have a protrusion jutting out the glass substrate 1. Therefore, 5 the signal connections are still problems for Kim, and there is obviously no protrusions of the upper substrate 1' to installation of signal connecting contacts in Kim's disclosure.

10 Since the first substrate 1 of Sekiguchi's disclosure is obviously not the CF substrate having a touch-detecting circuit and a color filter taught in the present application, applicants believe that it is not obvious to a person having ordinary skill in the art to consider first substrate 1 of Sekiguchi's disclosure as the CF substrate of the present application, and politely apply a reconsideration of such an incorporation.

15 Further referring to Mai, Mai does not teach that
(1) the upper substrate 132 has at least one protrusion jutting out of the lower substrate 118;
(2) the top substrate 132 has a plurality of signal connecting contacts disposed on 20 the protrusion of the second substrate 132; and
(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

25 In addition, Mai teaches that the flat display device combines a touch panel 102 and a transmissive-type LCD device 100 including a color filter substrate and a thin film transistor. On the contrary, the present invention directly integrates the claimed touch-detecting circuit into the LCD panel 400. It is therefore that the actual evidence for the structural characteristics is substantially inconsistent. In view of this, the 30 comparison of both Mai's disclosure and the present invention are unreasonable.

Further referring to Hinata, Hinata does not teach that

(1) the top substrate 8a has at least one protrusion jutting out of the bottom substrate 8b;

(2) the top substrate 24 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 24; and

(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

10 Although the bottom substrate 8b has at least one protrusion jutting out the top substrate 8a in Hinata's disclosure, there is no protrusion of the top substrate 8a jutting out of the bottom substrate 8b. The top substrate 8a and the bottom substrate 8b, which have different structures and different purposes, are completely different from each other, and should not be considered as the same. The protrusion of the second substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

20 The structure of the second substrate, the position of the signal connecting contacts, and the functions of the signal connecting contacts are not merely a meaningless design, the claimed structure is especially designed for integrating a touch-controlling circuit into liquid crystal display panel. However, all the recited references do not teach the claimed input-sensor-integrated liquid crystal display panel
25 having the protruded second substrate for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

30 The combination of Kim's disclosure, Mai's disclosure, Sekiguchi's disclosure and Hinata's disclosure does not disclose all the limitations of the structure in claim 13. Therefore, claim 13 should be allowable in consideration of 35 U.S.C. 103(a).

Reconsideration of claim 13 is respectfully requested.

Since claims 15-16 are dependent upon claim 13, they should be allowable if claim 13 is allowable. Reconsideration of claims 15-16 is respectfully requested.

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5. Rejection of claim 14 under U.S.C. 103(a)

Claim 14 is rejected under 35 U.S.C 103(a) as being unpatentable over Kim, Mai and Sekiguchi, as applied to claims 13, 17-19 above, and further in view of Colgan (US 6177918).

10 Response :

Claim 13 has the limitation of “the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of touch-detecting signals”.

15 As mentioned above, Kim, Mai, Sekiguchi and Colgan do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion.

20 Further referring to Colgan, Colgan does not teach that

- (1) the top substrate 24 has at least one protrusion jutting out of the bottom substrate 22; and
- (2) the top substrate 24 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 24.

30 Therefore, the combination of Kim’s disclosure, Mai’s disclosure, Sekiguchi’s disclosure and Colgan’s disclosure does not disclose all the limitations of the structure in claim 13. Therefore, claim 13 should be allowable in consideration of 35 U.S.C.

103(a). Since claim 14 is dependent upon claim 13, it should be allowable if claim 13 is allowable. Reconsideration of claim 14 is respectfully requested.

6. Rejection of claim 20-27 under U.S.C. 103(a)

5 **Claims 20-27 are rejected under 35 U.S.C 103(a) as being unpatentable over Kim in view of Ikeda et al. (Hereinafter “Ikeda” US 6504584), and further in view of Sekiguchi.**

Response :

10 Claim 20 has been amended to specifically describe the input-sensor-integrated liquid crystal display panel of the present application. The limitation of “the first substrate dis-coinciding with the second substrate” added to claim 20 can be supported by paragraph [0017] of the specification and the drawings FIG. 4-FIG. 5. The paragraph [0017] of the specification indicates “*To achieve the demand, the top substrate 204 is not designed to coincide with the bottom substrate 202 completely for setting signal connecting contacts. For instance, the top substrate 204 has at least one protrusion 206 jutting out the bottom substrate 202 and the bottom substrate has at least one protrusion jutting out the top substrate 204*” No new material has been introduced. Acceptance of the amended claim 20 is respectfully requested.

20 Claim 20 has the limitation of “the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of touch-detecting signals”, and the limitation of “a first substrate having at least one pixel controlling circuit, and a color filter formed on the pixel controlling circuit... a liquid crystal layer filled between the space formed by the first substrate and the second substrate”. As shown in paragraph [0015] and Figs. 2-3 of the present application, the pixel controlling circuit 218 and color filter 208 are fabricated on the same substrate by the color filter on array process (COA) technique. Therefore, more

surface space is reserved for other application on the top substrate 204.

In other words, the claimed input-sensor-integrated liquid crystal display panel can be an in-cell type position-sensitive liquid crystal display, which integrates the touch-detecting circuit into a second substrate of the LCD panel, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate.

However, Kim does not teach a position-sensitive liquid crystal display, which integrates the touch-detecting circuit into a second substrate of the LCD panel, and Kim does not teach an integral protrusion of the second substrate of the LCD panel, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate. Therefore, Kim, lkeda and Sekiguchi do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion.

The protrusion of the second substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals, as described in claim 20. On the contrary, Kim, lkeda and Sekiguchi dose not teach or suggest such a second substrate of the LCD panel, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate.

Since the upper substrate 1' of Kim's disclosure is obviously not the second substrate, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate in the present application, applicants believe that it is not obvious to a person having ordinary skill in the art to consider the upper substrate 1' of Kim's disclosure as the second substrate of the present application.

On the other hand, as shown in the drawings of Kim's disclosure, the color filter 7 taught by Kim does not have a protrusion jutting out the glass substrate 1. Therefore, the signal connections are still problems for Kim, and there is obvious no protrusions of the upper substrate 1' to installation of signal connecting contacts in Kim's disclosure.

5 Further referring to Ikeda, Ikeda does not teach that

- (1) the upper substrate 4 has at least one protrusion jutting out of the lower substrate 3;
- 10 (2) the top substrate 4 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 4; and
- (3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

15 The combination of Kim's disclosure, Ikeda's disclosure and Sekiguchi's disclosure does not disclose all the limitations of the structure in claim 20. Therefore, claim 20 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of claim 20 is respectfully requested.

20 Since claims 21-27 are dependent upon claim 20, they should be allowable if claim 20 is allowable. Reconsideration of claims 21-27 is respectfully requested.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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Sincerely yours,

/Winston Hsu/

Date: 09/17/2009

Winston Hsu, Patent Agent No. 41,526

5 P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)